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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,365	12/28/2001	Martin Roos	216253US0	3367
22850	7590	09/02/2005		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER WACHTEL, ALEXIS A	
			ART UNIT	PAPER NUMBER
			1764	
DATE MAILED: 09/02/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/028,365

Applicant(s)

ROOS ET AL.

Examiner

Alexis Wachtel

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9-9-02, 5-22-02, 12-28-01, 7-5-02
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Detailed Action***

***Claim Objections***

1. Claims 3 and 15 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Independent claim 1 claims a condensation surface comprising a plurality of elevations. Claims 3 and 15 claim a condensation surface without a plurality of elevations.

***Claim Rejections - 35 USC § 112***

2. Claims 3 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant does not explain how claims 3 and 15 are related to independent claim 1.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action: A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1,2,5,9,11,14,17 and 21 rejected under 35 U.S.C. 102(b) as being anticipated by US 4,166,498 to Fuji et al.

With respect to claim 1, Fuji et al teach a condensation apparatus comprising, a condensation surface (Fig.1), wherein said condensation surface comprises a

Art Unit: 1764

plurality of elevations (3), said plurality of elevations having an average height of from 50 nm to 1 mm (Col 2, lines 18,19) and an average separation of from 50 nm to 1 mm (Col 2, lines 16-17).

With respect to claim 2, Fuji et al teach that the condensation surface has an angle of inclination of at least 30 degrees (Fig.1). Examiner notes that the condensation surface has an inclination of at least 30 degrees relative to at least some elements in the environment.

With respect to claims 5 and 17, Fuji et al teach that the condensation surface comprises at least one metal, (Col 4, lines 34-35).

With respect to claim 9 and 21, Fuji et al teach The apparatus as claimed in claim 1, wherein the plurality of elevations are distributed in an ordered pattern on the condensation surface (Fig.1).

With respect to claim 11, Fuji et al teach contacting a condensable gas with a condensation surface to form a condensate (Col 1, lines 4-10), wherein said condensation surface comprises a plurality of elevations having an average height of from 50 nm to 1 mm (Col 2, lines 18,19) and an average separation of from 50 nm to 1 mm (Col 2, lines 16-17).

With respect to claim 14, Fuji et al teach wherein the condensation surface has an angle of inclination of at least 30 (Fig.1). Examiner notes that the condensation surface has an inclination of at least 30 degrees relative to at least some elements in the environment.

***Claim Rejections - 35 USC § 103***

Art Unit: 1764

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,166,498 to Fuji et al.

With respect to claims 8 and 20, Fuji et al do not teach that the plurality of elevations are randomly distributed on the condensation surface. However, conceptually, the elevations prevent the formation of a fluidic film on a condensation surface. One of ordinary skill, looking at the art as a whole would have provided a condensation surface with a plurality of elevations randomly distributed on the condensation surface with a reasonable expectation of success.

7. Claims 10,12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,166,498 to Fuji et al in view of GB 889157.

With respect to claim 10, Fuji et al do not teach employing a distillation system with a condensation surface. GB 889157 teaches the conventionality of employing condensation surfaces in conjunction with a distillation apparatus (Pp.1, Col 1, lines 11-16). In view of this teaching it would have been evident to one of ordinary skill in the art at the time the invention was made to have employed a distillation apparatus with a a condensation surface. Doing so would only have been considered a routine matter of design choice.

While Fuji et al teach that heat transfer walls find utility in applications such as refrigeration, airconditioning and air separation, Fuji et al is silent with respect to claims 12 and 13, wherein the condensable gas is steam/water, alcohol vapor or fuel vapor. GB 889157 teaches the conventionality of employing condensation surfaces in conjunction with a distillation apparatus (Pp.1, Col 1, lines 11-16). A condensation surface in combination with a distillation apparatus can be used to distill seawater (pp.5, Col 1, lines 57-59).

8. Claims 6-8,16,18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,166,498 to Fuji et al in view of US 6,447,919 to Brown et al.

With respect to claim 4,6,7,16,18 and 19 Fuji et al fail to teach that the condensation surface is coated with polytetrafluoroethylene, polyvinylidene fluoride, or polymers comprising perfluoroalkoxy compounds. Brown et al teach that a hydrophobic coating may be applied to an operational surface that can be made of metal and wherein the operations surface can be smooth, rough, pitted, grooved or having patterned physical features (Col 7, lines 55-63). Perfluoro-2,2-dimethyle-1,3-dioxole can be used a coating material (Col 11, lines 41-43) which reads on a perfluoroalkoxy compound. Additionally, fluoroalkylsilanes can also be used as a hydrophobic coating material (Col 13, lines 31-33). Since Fuji et al teaches a condensation surface which advantageously prevents the formation of fluidic films, it would have been obvious to one of ordinary skill in the art, taking the art as a whole to have coated the condensation surface as disclosed by Fuji et al motivated by the desire to improve the heat transfer capabilities of said condensation surface.

Art Unit: 1764

***Prior Art of Record***

9. The prior art of record and not relied upon is considered pertinent to Applicant's disclosure. In addition, the following references are cited for disclosing various aspects of Applicant's invention:

US 6,176,303; US 5,199,486; US 6,427,767; US 4,492,268; US 6,018,963;

US 6,470,691; US 6,649,266; US 5,599,489; US 6,447,919; US 6,068,911;

US 4,601,933; US 6,571,865

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Wachtel whose telephone number is 571-272-1455. The examiner can normally be reached on 10:30am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Caldarola, can be reached at (571)-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Glenn Caldarola  
Supervisory Patent Examiner  
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